

# The Blue Accelerator test site, the next stop for maritime development

2nd COB seminar  
06/02/2020

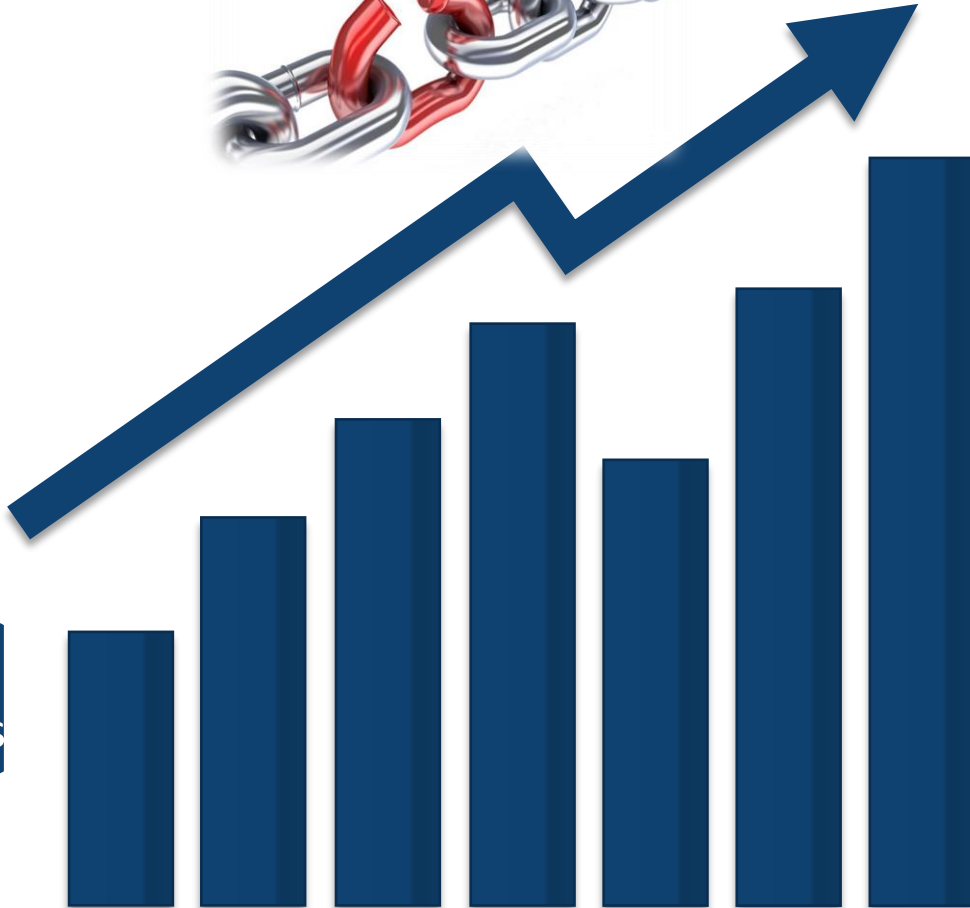
Ben De Pauw

# €48 billion

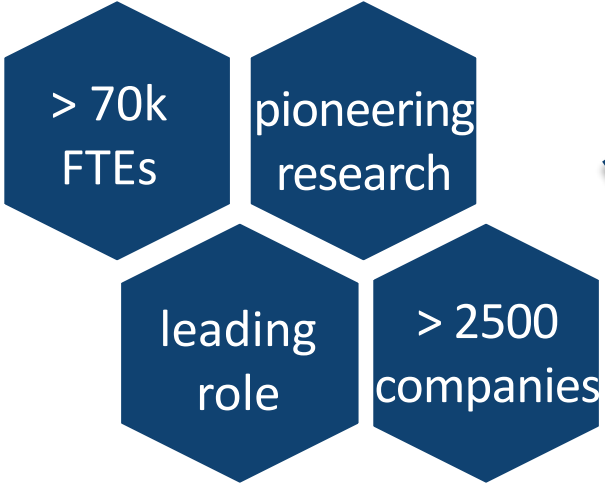
≈ 5% of GDP of Flanders



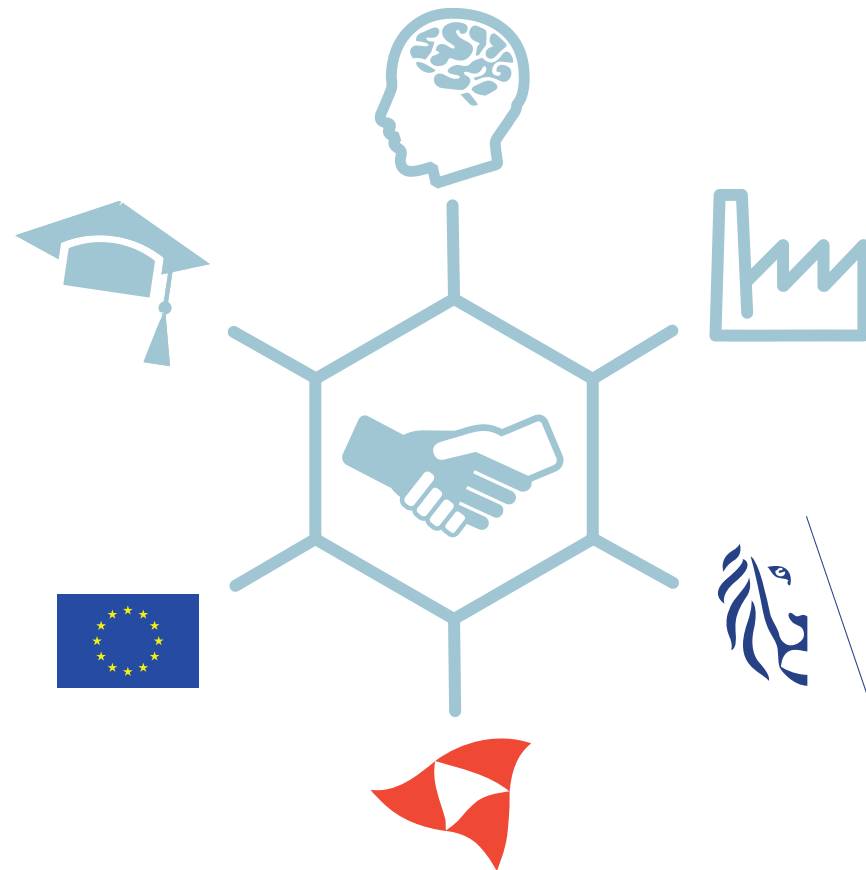
# framework & infrastructure for developments essential



*blue economy in Flanders*



# TASK: creation of a living lab test site in Belgium's blue economy centre





# BLUE ACCELERATOR

*Maritime Innovation  
& Development Platform*

*Fully equipped living lab  
Nearshore conditions  
Open to everyone*

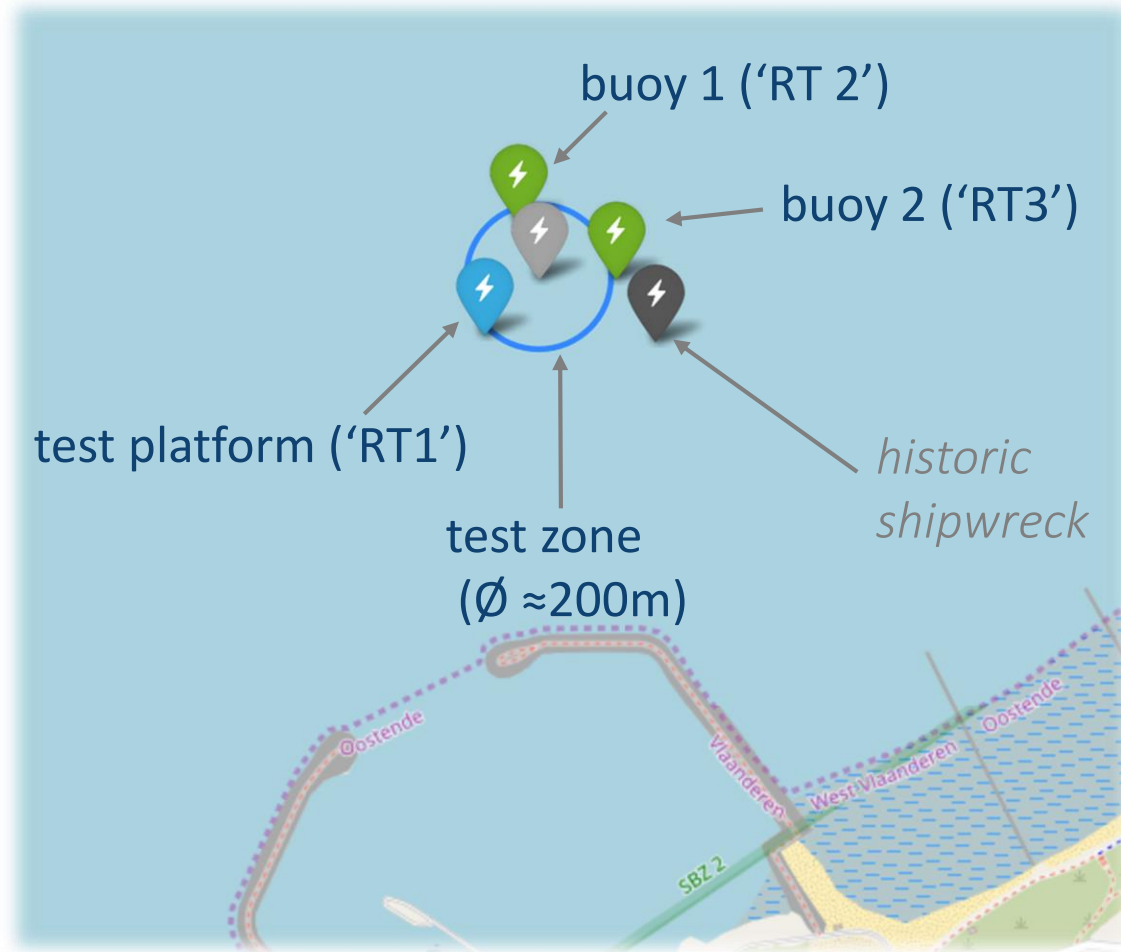
**situate the Blue Accelerator**

**illustrate potential for wave research**

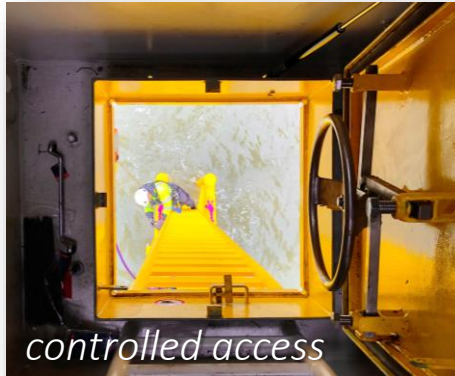
**explain the best practices**



# The site comprises a test platform & test zone and is located $\approx 500$ m of the Port of Ostend



# A living lab facility for tests & demonstrations above, on and below the water on topics such as:

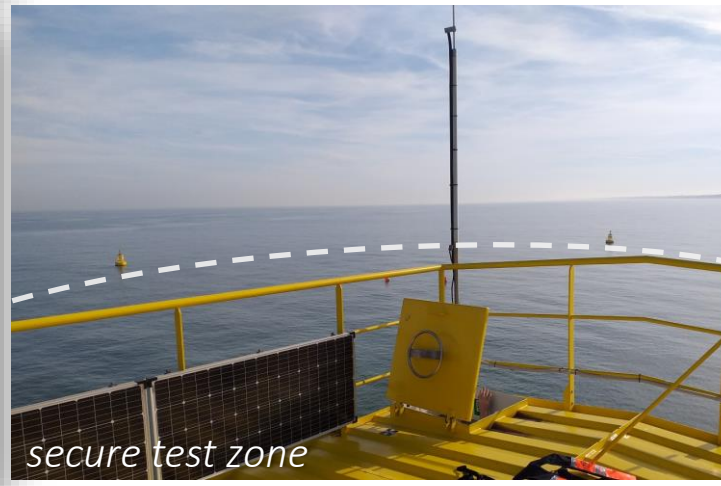


*controlled access*

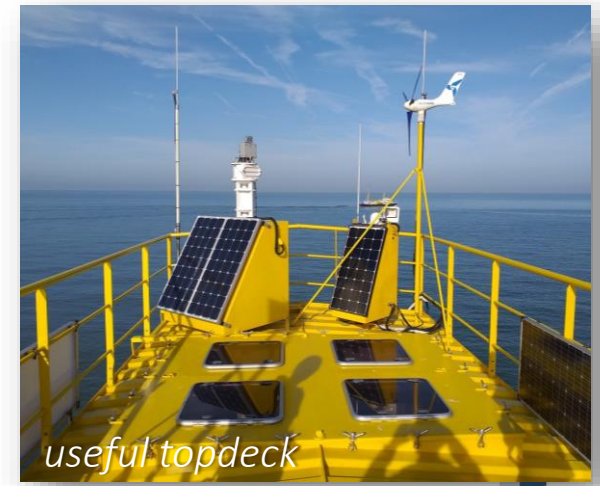
- wave/tidal energy conversion
- corrosion testing
- abrasion and erosion experiments
- aerial and marine drones
- marine growth trials
- meteorological assessments



*flexible interior*



*secure test zone*



*useful topdeck*



# 'Blue Accelerator' fits perfectly in a chain of test facilities

*blue accelerator*



*large climate chamber*

*coastal and ocean basin  
towing tank*

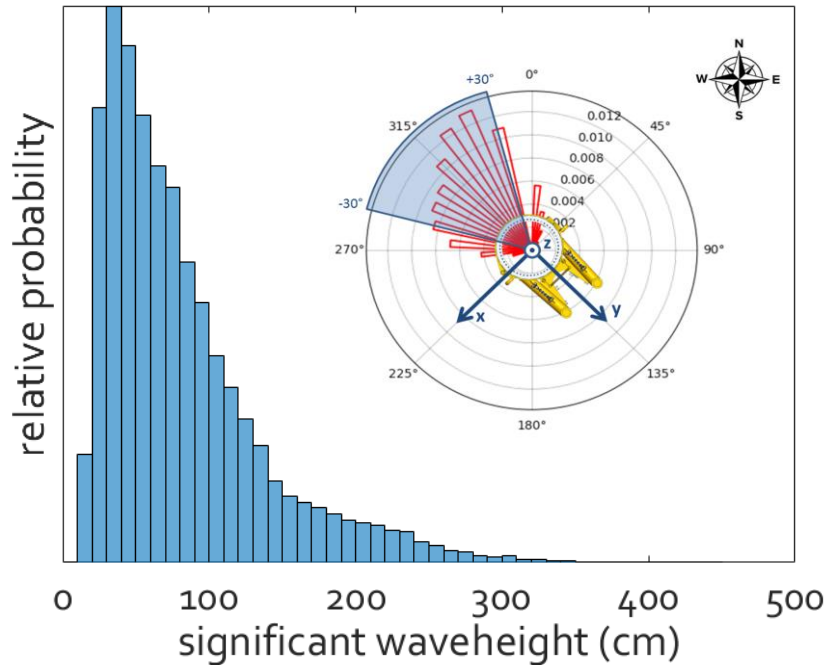
*test zone port of Ostend*

*research vessel Simon Stevin  
marine station Ostend*

*offshore wind farms*



# A test facility with *moderate metocean conditions*



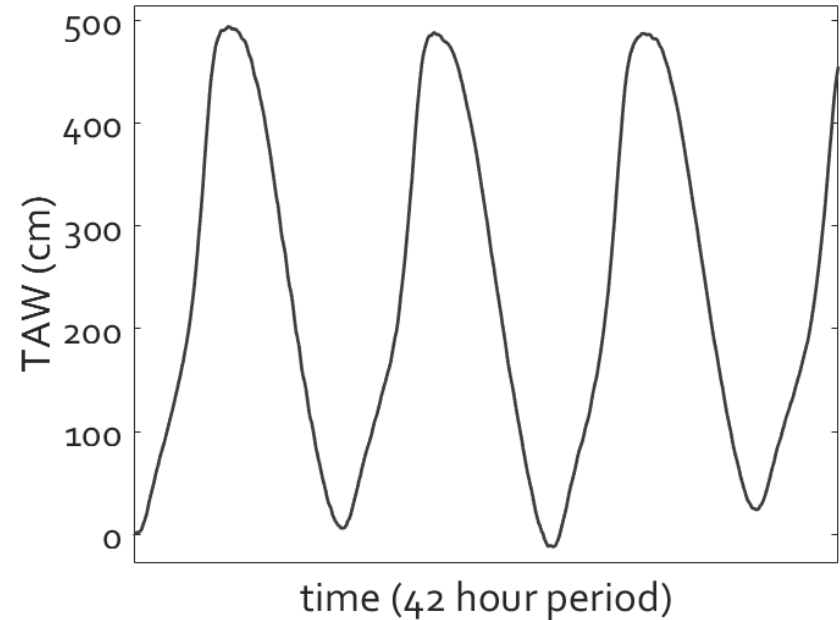
*statistics:*

$$E[H_s] = 0.80 \text{ m}$$

$$\max[H_s]_{5y} = 4.93 \text{ m}$$

$$E[T_w] = 2.7 - 4.8 \text{ s}$$

$$E[\phi_{\text{wave}}] = N(N)W$$



*statistics:*

$$E[U_{\text{current}}] = 0.15 - 0.90 \text{ m/s}$$

$$\max[U_{\text{current}}]_{5y} = 1.87 \text{ m/s}$$

$$T_{\text{sea}} \in [277 - 296] \text{ K}$$

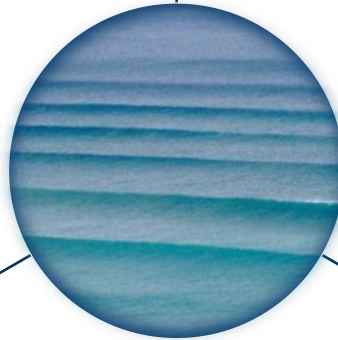


# A range of opportunities to conduct wave-based research

*chaotic waves*



*conventional wind waves*



**+ currents!**

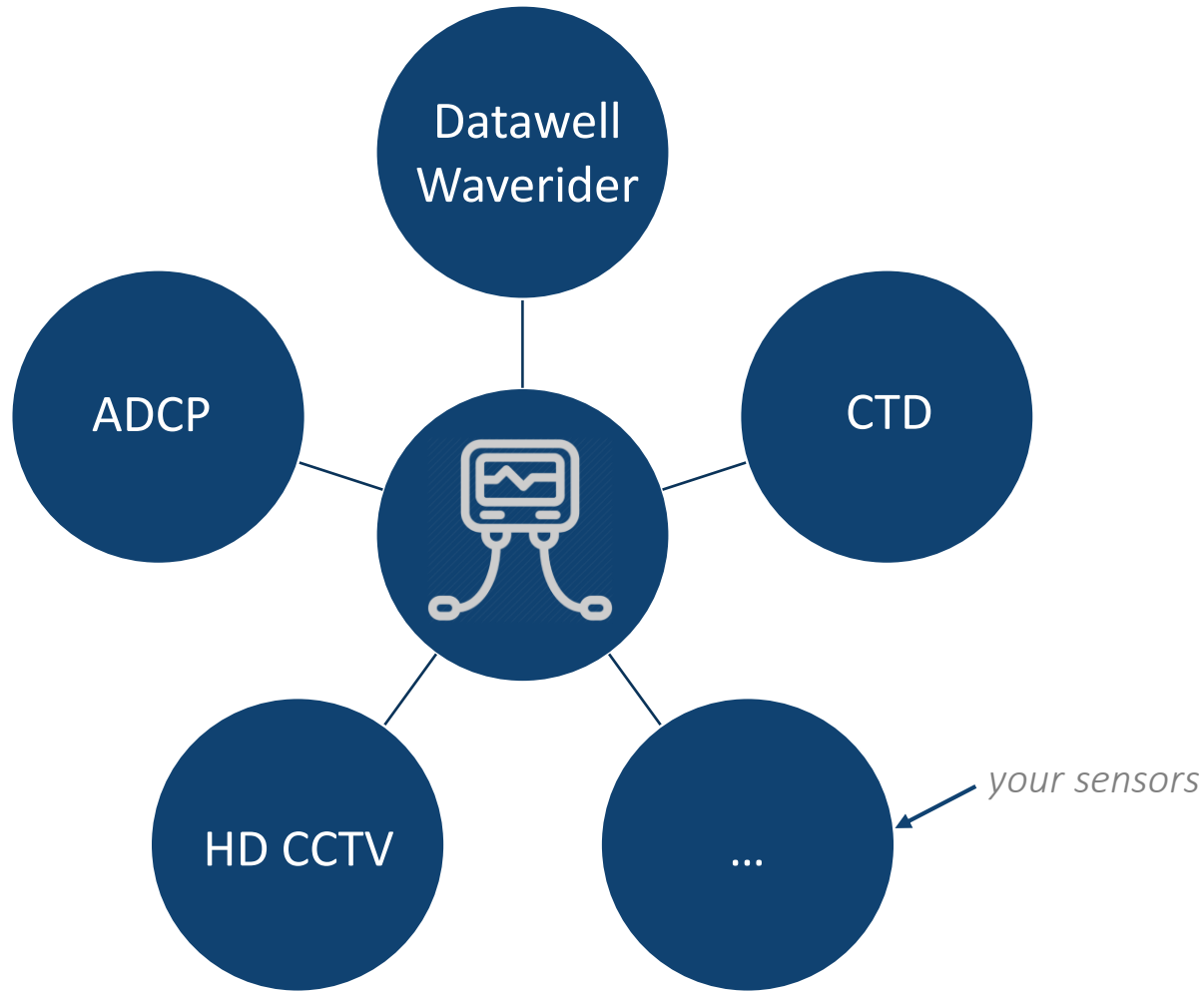
*shoreline defense*



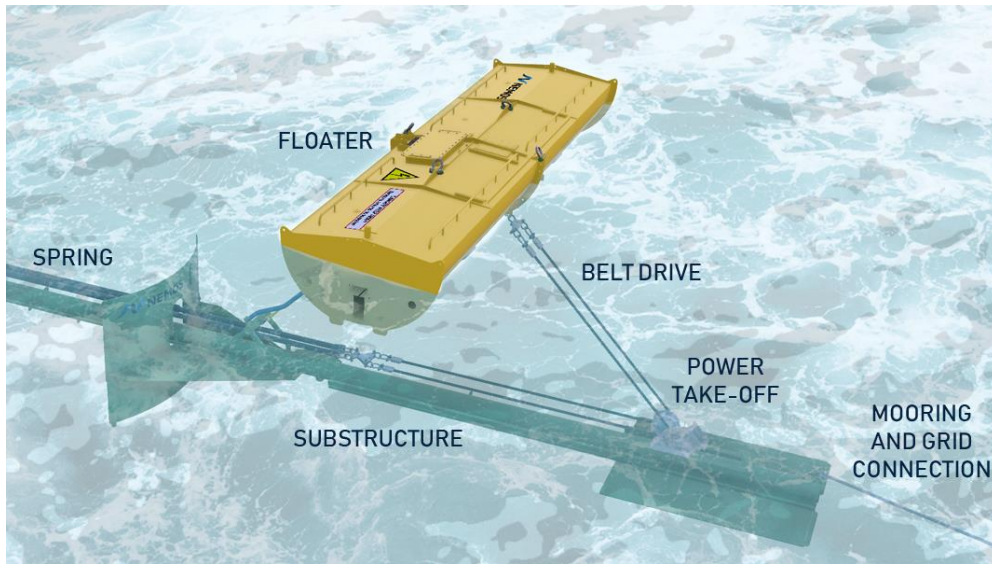
*breaking waves*



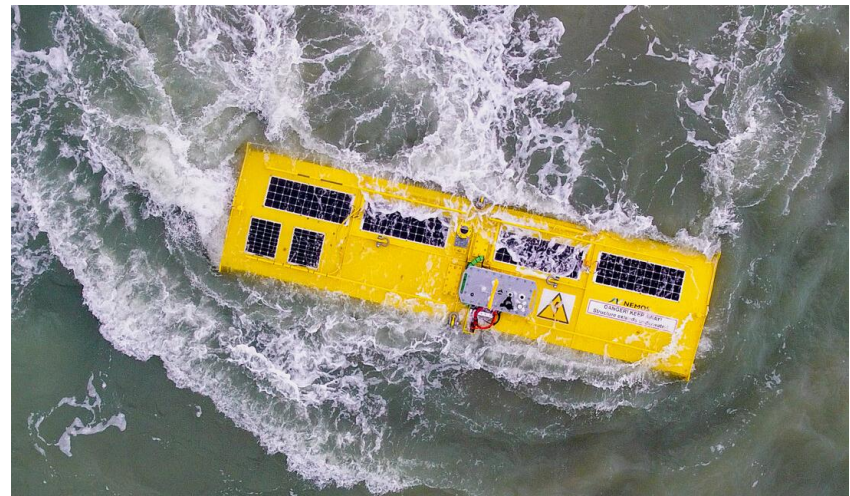
# A 'smart' test site for model validation



# Use case: moored WEC



- First user of test site
- 8 x 2 m floater and a 16 m long substructure
- Ongoing tests during 2020





MET-CERTIFIED  
aims to accelerate the adoption  
of insurable & bankable marine  
energy technologies



consolidated by test facilities  
such as the Blue Accelerator



## Collect best practices and formulate recommendations for Blue Accelerator

### short term

- COB link
- Fast/easy consenting
- Join funding programs

### medium term

- Increase monitoring activities
- Expand offered services




### long term

- Increase monitoring activities
- Install power cable

# The Blue Accelerator test site, the next stop for maritime development

**OPEN**  
FOR BUSINESS  
19TH MARCH

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*project partners:*



*supported by:*

